sapience
Consultants and Engineers
(Building, Geo-Tech & Road Materials Testing Laboratory)

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SCE/PMC/QCR-2/BBMP/D.Halli/2022-23/57

Date: 28.07.2022

To,
Executive Engineer
Dasarahalli Division,
BBMP, Bangalore

Dear Sir,

"Second and Part PMC CERTIFICATE / INSPECTION REPORT"

Package Name: Restoration and Improvements of Roads and Drains in A Y R Layout, Shettyhalli Village,RR Layout of Chikkasandra Village and Abigere Village Roads, BTS Village, Vishveshwariah Village, Royal Enclave and Sidedahalli Old Village Roads Dugged by BWSSB to lay Water Supply and UGD Lines under 110 Villages in Ward No 12 & 14 Shettyhalli.

Sl. No.	Description	Unit	Present Measurement Qty
1	Removing & Refixing stone slabs of drains and pointing in C.M (1:3)	Sqm	5177.34
2	Earthwork excavation by manual means for roads, drains & similar works in ordinary soil excavated surface levelled and sides neatly dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specifications.	Cum	12156.70
3	Providing and laying in position plain cement concrete of Mix 1:4:8 with OPC @180kgs, with 40mm and down size graded granite metal coarse aggregates @0.85cum and fine aggregates @ 0.57cum machine mixed, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation including cost of all materials, labour, HOM curing complete as per specifications.	Cum	9.23
4	KSRRB M2200-6. Providing T.M.T. steel reinforcement for R.C.C. work including straightening, cutting, bending, hooking, placing in position, lapping and/or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per disign (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM complete as per specification.	Cum	1.57
5	Providing and laying plain/reinforced cement concrete for side drains using M20 nominal mix concrete with OPC at 300 kgs. with 20mm and down size granite metal coarse aggregates at 0.69 cum and fine aggregates at 0.43 cum machine mixed, well compacted for walls and bottom including centering, shuttering, cost of materials, HOM of machinery, curing etc., complete excluding cost of steel as per MORTH specification No. 1500,1700, 2200. including cost of materials, labour, HOM complete as per specifications.	Cum	21.09
6	Providing and laying Pre cast drain cover slabs 230mm thick of mix m20 using graded granite jelly 20mm down size with steel reinforecemnt including from work lift charges curing and concrete finished surface on the both side etc complete as directed by engineer incharge of the work.	Cum	23.04

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Sl. No.	Description	Unit	Present Measurement Qty
7	Providing 7.5 cms thick granite slabs of selected quality roughly dressed and fixed in cement mortar (1:6) including fixing curing etc., complete.	M	0.00
8	Providing and Fixing Pre cast covering slab 100m thick made out of CC Jelly 20mm Down size with steel Reinforecement including form work including cost of all materials labour hire charges of machinery loading unloading lead and lift transportion etc., engineer incharge of the work.	Cum	405.54
9	Scarifying by mechanical means stone metal crust 50mm to 100mm thick by along with 20mm premix carpet I surface dressing and stacking of old serviceable materials including cost of all labour charges, HOM complete as per specifications.	Cum	32641.84
10	Laeding Charges for Scarified Quantity	Cum	2448.14
11	Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled materials stacking serviceable and unserviceable materials seperately complete as per specifications.	Tonne	
12	Providing and filling Stone dust in Foundation to required depth for Sub Soil treatment including watering ramming with all lead and lift complete as per specification	M	1148.50
13	Providing and Constructing dry lean cement concrete mix CC 1:5:10 base with OPC 25mm and down size graded granite metal coarse aggregate at 0.86cum and fine aggregates @0.58cum over a prepared sub-base, coarse and fine aggregate conforming to IS: 383-2016,aggregate cement ratio not to exceed 15:1, Aggregate gradation after blending to be as per Table 600-1 .optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver, compacting with 8-10 tonnes vibratory roller, finishing and curing complete as per specifications.	Sqm	55.37
14	Constructing un-reinforced, plain cement concrete for pavements using Grade concrete M30 over a prepared base with OPC coarse aggregate at 0.69 cum, fine aggregates at 0.46 cum,Coarse and fine aggregate conforming to IS:383-2016, with Superplastizer at 3 lts conforming to IS 9103-2008. mixed in a concrete mixer of not less than 0.6 cum capacity and appropriate weigh batcher as per approved mix design, laid in approved fixed side form work (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the form work as per drawing). &= Spreading the concrete with shovels, rackers compacted using needle, screed and plate vibrator and finished with floaters in a continuous operation including provision of contraction, expansion, construction and longitudinal joints,including groove cutting charges, joint filler, soparation membrane of impermiable plastic sheet of 125 micron, sealant primer, joint sealant, admixtures as approved, curing compound, finishing.etc	Sqm	83.06
15	Construction of granular sub-base Grading-V as Sub-base and drainage layer by providing coarse graded crushed stone aggregates of granite/ trap/basalt material, mixing in a mechanical mix plant at OMC, Carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the 98 % proctor density, complete as per specifications. Clause 401 of MORTH V Revision	No	4896.28

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Sl. No.	Description	Unit	Present Measurement Qty
16	Providing, laying, spreading and compacting cushed stone aggregates of granite / trap / basalt to wet mix macadam specifications including pre mixing the material with water at OMC in mechanical mix plant carriage of mixed materials by tipper to site, laying in uniform layers with paver in sub-base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density complete as per specifications	Sqm	6528.37
17	Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatment including cost of all materials, labour, HOM complete as per specifications.	Sqm	0.00
18	Providing and applying primer coat with S.S. bitumen emulsion on prepared surface of granular base such as WMM including cleaning of road surface and spraying primer at the rate of 0.60 kg / sqm using mechanical means complete as per specifications. Clause 502 of MORTH V revision	Cum	32641.84
19	Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading; premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and ialignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects complete as per specifications.- do - using 40/60 TPH capacity H.M.P. with Mechanical paver Gr-II Cum (50 mm to 75 mm) with 4.5 % VG-30 Bitumen	Rmt	1632.09
20	Providing and applying tack coat using 80/100 grade bitumen(VG10) on the prepared black topped surfaces at 2.5 kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM complete as per specifications.	Each	32641.84
21	Providing and laying bituminous concrete 40mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects complete as per specifications.- do - using 40-60 TPH capacity HMP with mechanical paver grading II Cum (30-45mm) with 5.4 % of modified bituminous binder consisting of 4.97% of VG-30 bitumen (60/70 grade) and 0.43% of plastomeric thermoplastics (waste plastic)	Cum	979.26
22	Road Marking with Hot Applied Thermoplastic Compound with Reflectrising Glass Beads on Bituminous Surface/ Concrete Surface: Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 standards specified. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803	Cum	1467.67

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Sl. No.	Description	Unit	Present Measurement Qty
23	Supply and Installtion of Moulded Shank Raised Nos. Pavement Markers made of polycarbonate and ABS(Acrylonitrile Butadiene Styrene) moulded body and reflective panels with micro prismatic lens capable of providing total internal reflection of the light entering the lens face and shall support a load of 16000 kg tested in accordance to Specifications of Category A of MORTH Circular No RW/ NH/33023/10-97 - DO III Dt 11.06.1997. The height, width and length shall not exceed 50 mm, 100 mm and 102 mm and with minimum reflective area of 13 Sqcm on each side and the slope to the base shall be 35 degree. The strength of detachment of the integrated cylindrica shanks, (of diameter not less than 19 mm and height not less than 30 mm) from the body is to be a minimum value of 500 Kg. Fixing will be by drilling holes on the road for the shanks to go inside, without nails and using epoxy resin based adhesive as per manufacturer's recommendation and complete as directed by the engineer.	Cum	250.00

With respect to above subject and Package Name, we have inspected the work and the Quality and Quantity of above mentioned items of the work was found to be completed satisfactorily for the **SECOND and PART** Bill.

Thanking You,

With Regards,

SAPIENCE CONSULTANTS & ENGINEERS Bangalore-56

for Sapience Consultants and Engineers